

화학적 수핵용해술후 극외측 요추간반 탈출증의 임상결과

진병호 · 김영수 · 윤도흠 · 조용은

= Abstract =

Clinical Results of Chemonucleolysis for the Far Lateral Lumbar Disc Herniation

Byung Ho Jin, M.D., Young Soo Kim, M.D.,
Do Heum Yoon, M.D., Yong Eun Cho, M.D.

Department of Neurosurgery, Yonsei University, College of Medicine, Seoul, Korea

The far lateral lumbar disc herniation occurs ten times less often than the classic posterolateral disc herniations. Its clinical presentation, the anatomy involved, and difficulty of surgical treatment are not well understood. The surgical approach and results also have not been clearly defined. Although there are limited number of reports and series in the literature, there is still no general consensus on the approach to surgical treatment.

However, chymopapain, even with a history of controversy and troubling complications, has endured the test of time to show 30 years of clinical success in the treatment of herniated nucleus pulposus. Strict attention to indications, contraindications, and technique ensures safety and efficacy of treatment. Between 1984 and 1997, we treated with chymopapain injection in 69 patients with severe lumbar radiculopathy secondary to far lateral disc herniation. Average patient age was 38.5 years in the 47 male and 22 female patients involved. The L4 - 5 disc was the most commonly herniated level(44.9%) followed by L3 - 4(37.8%), L5 - S1(13.0%), and L2 - 3(4.3%). They were assessed using standardized forms as well as the Mcnab classification and questioner. They were reviewed at an average of 5 years 8 months postoperatively. Relief of symptoms was obtained in 63 patients(91.3%) after injection. No one subsequently relapsed requiring operation. All 69 patients available for long - term follow - up had considerable and sustained relief from their symptoms. For ADL(activity of daily living), 50 patients(81.3%) answered that they had no limitation, and regarding the office or house work, 49 patients(71.0%) returned previous work without any difficulties.

Based on these findings we recommend the chymopapain injection as the primary treatment for patients with severe radiculopathy secondary to far lateral herniation of a lumbar disc.

KEY WORDS : Chemonucleolysis · Chymopapain · Far lateral lumbar disc herniation.

서 론

가 14)24)26)29)39)42)

(spinal canal)

13)18)34)36)38)

(neural foramen)

1)2)6)9)11)12)15)19)32)33)

Chymopapain

CT scan MRI

가 2 : 1 (Table 1).

3)4)8)16 - 18)21)23)27)30)31)37) .

(ganglion)

가

13

69

연구대상 및 방법

1984 5 1997 4

3042

69 (2.3%)

spine CT, MRI, (myelography)

(discogram) spine CT

(calcification)

(calcification)가

chymopapain

(discogram)

(dye leakage)

(epidural leak)

1 , 3 , 6

Mcnab classification 가

가 , ADL

(activity of daily living)

14 12

5 8

결 과

1. 연령 및 성별분포

17 68 38.5

, 30 40 69 39 56.5%

가 47 가 22 2.

2. 임상증상

가 34

49.3% , 12

17.4% (Table 2).

17 1 9 5

12 . 1

6 가 37 (53.6%) 가 , 1

10 14.5%

6 1 가 16 (23.2%) , 1

6 (8.7%)

45 °

가 35 가 45 ° 90 °

가 21 , 가 13 .

3. 방사선학적 소견

69

L4 - 5 31 (44.9%) 가 L3

- 4가 26 (37.8%), L5 - S1 9 (13.0%) L2 - 3

3 (4.3%) (Table 3).

(discography)

Table 1. Age and sex distribution

Age/Sex	Male	Female	Total
< 20	3	1	4
20 - 29	9	4	13
30 - 39	13	4	17
40 - 49	14	8	22
50 - 59	4	2	6
> 60	4	3	7
Total	47	22	69

Table 2. Clinical symptoms

Symptom	No. of cases	%
Back pain dominant	12	17.4
Leg pain dominant	34	49.3
Back pain & leg pain	23	33.3
Total	69	100.0

Table 3. Level of disc herniation

Level	No. of cases	%
L2 - 3	3	4.3
L3 - 4	26	37.8
L4 - 5	31	44.9
L5 - S1	9	13.0
Total	69	100.0

Table 4. Results according to types of disc herniation

Type	No. of cases(%)	No. of success(%)
Diffuse	370(12.1)	244(65.9)
Post-central	732(24.1)	543(74.2)
Post-lateral	1871(61.5)	1771(94.7)
Far lateral	69(2.3)	63(91.3)
Total	3042(100.0)	2606(85.6)

Table 5. Result of far lateral disc herniation

Type	No. of cases	%
Excellent	47	68.1
Good	16	23.2
Fair	4	5.8
Poor	2	2.9
Total	69	100.0

Table 6. Results according to discography

Pain provocation	No. of cases	No. of success(%)
Positive	57	55(96.5)
Negative	12	8(66.7)
Total	69	63(91.3)

Table 7. Activity of daily living after injection

ADL	No. of cases	%
Normal	56	81.3
Mild disability	9	13.0
Moderate disability	3	4.3
Severe disability	1	1.4
Total	69	100.0

Table 8. Status of office or house work after injection

	No. of cases	%
Normal	49	71.0
Mild disability	13	18.8
Moderate disability	4	5.8
Severe disability	3	4.3
Total	69	100.0

69 57 82.6%

4. 수술결과

가 Mcnab classification

excellent good

3042 excellent가 2037 (66.9%), good 569 (18.7%) 85.6%

(posterior - lateral type) 1871 1771 (94.7%)

가 (far - lateral type) 91.3%, (posterior - central type) 74.2%

(diffuse type) 가 370 244

65.9% (Table 4).

(far - lateral type) excellent가 47 (68.1%), good 16 (23.2%) 2 (2.9%) poor

(Table 5). 20

4 , 50

6 100%

34 32 가

94.1%

12 10 가 83.3%

35 34

(97.1%)

13 10 (76.9%)

(discography)

55 (96.5%)

66.7%

57

(Table 6).

가

가

69

36 (52.2%) 1

6

57 (82.7%)

1 27 (39.1%), 6 54 (78.2%)

64 (92.8%) , 61 (88.4%)

70%

ADL(activity of daily living)

81.3% 가 (Table 7).

가 71.0%

18.3%

89.8%

가 (Table 8).

고 찰

(pedicle)

(Fig.

1),

(neural foramen)

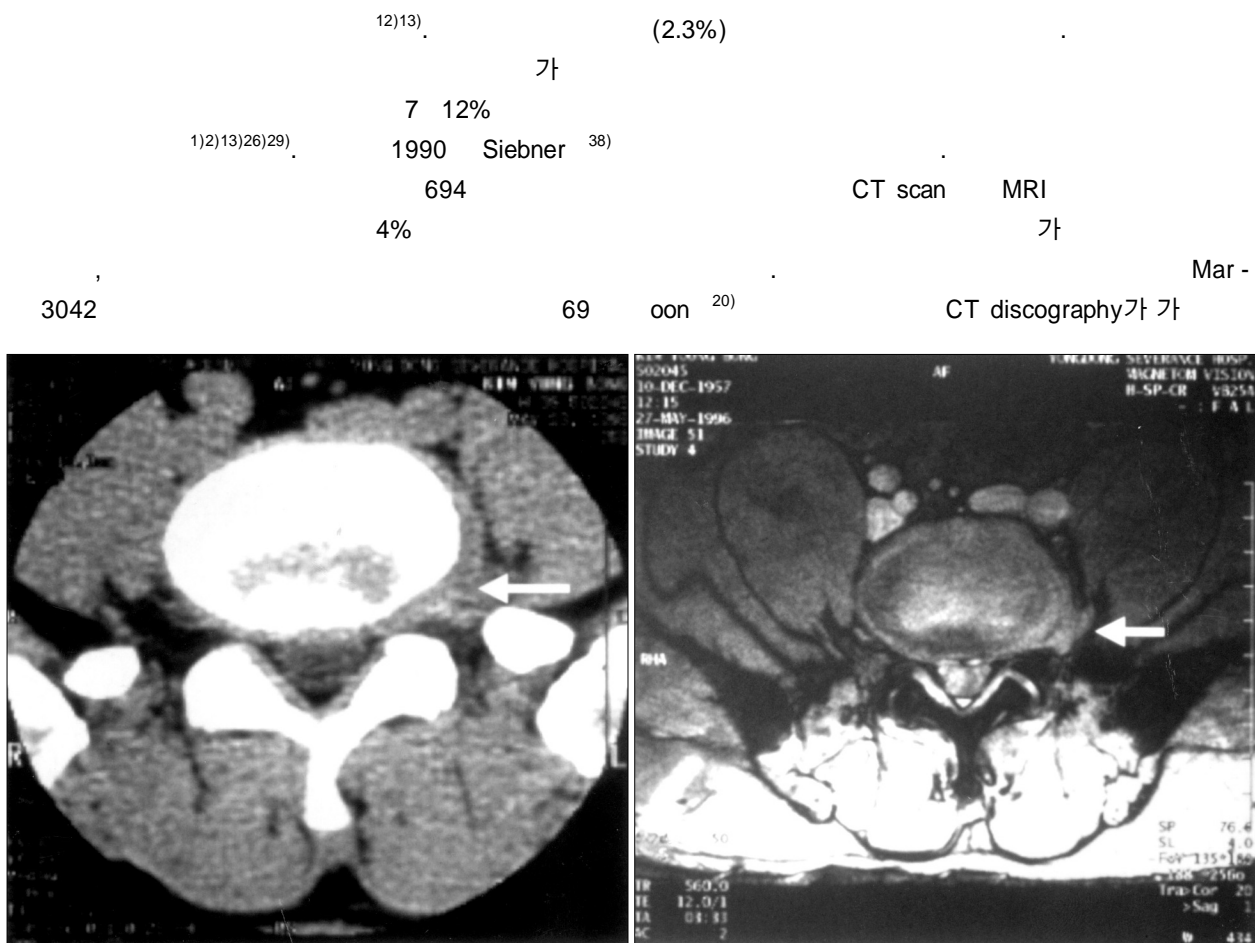


Fig. 1. CT scan showing far lateral disc herniation(right), and MRI also revealing the same lesion(left).

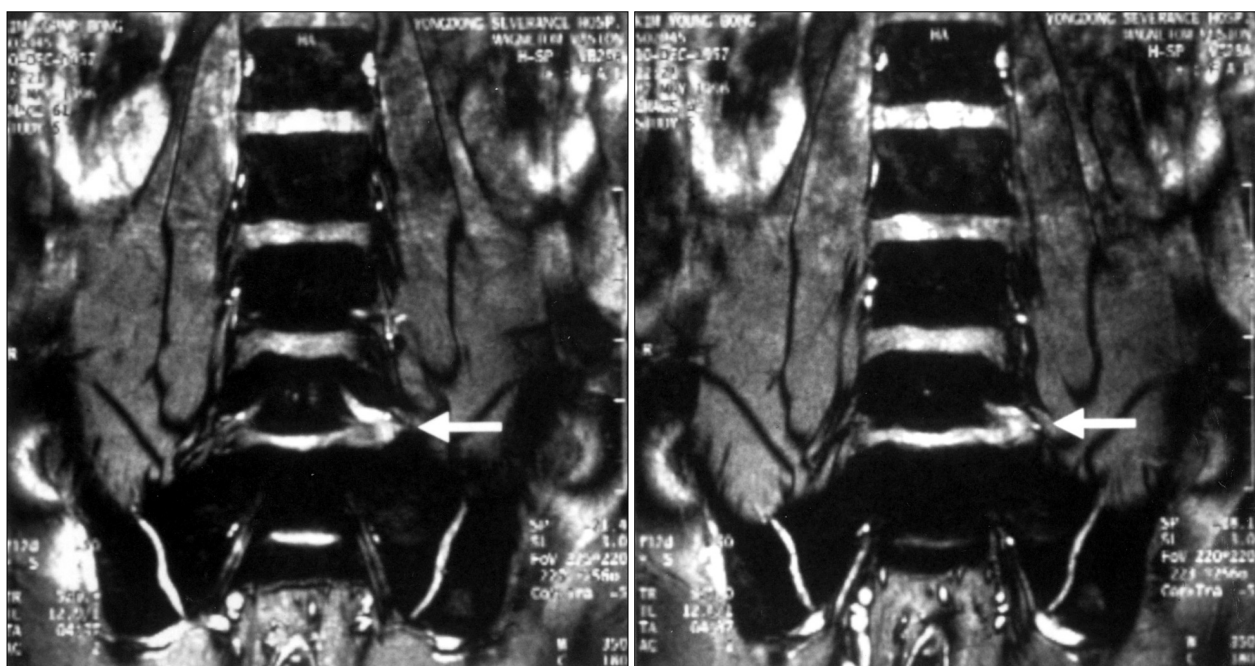


Fig. 2. Coronal MRI scan demonstrating far lateral disc herniation and secondary nerve root compression(arrow).

, noncontrast CT MRI ment)
 (scoliosis), (paraverte -
 bral mass), volume ave -
 raging (pseudolesion) 12 (17.4%) 가 34 (49.3%)
 MRI 4 - 5
 coronal image가 가 , 5 - 3 - 4
 (Fig. 2). 5)11)13)34)
 (myelography)
 (myelo - CT scan) (subarachnoid sp -
 ace) (neural foramen)
 가 14)29)42) 가
 (discography) 가
 (Fig. 3), 가
 96.5% 1)2)6)9)11)13)
 66.7% 가
 (total facetectomy) (pars in -
 terarticularis) 13)15),
 17) (extended medial facete -
 ctomy)
 (ganglion) (nerve root)
 (intertransverse liga - 가 가

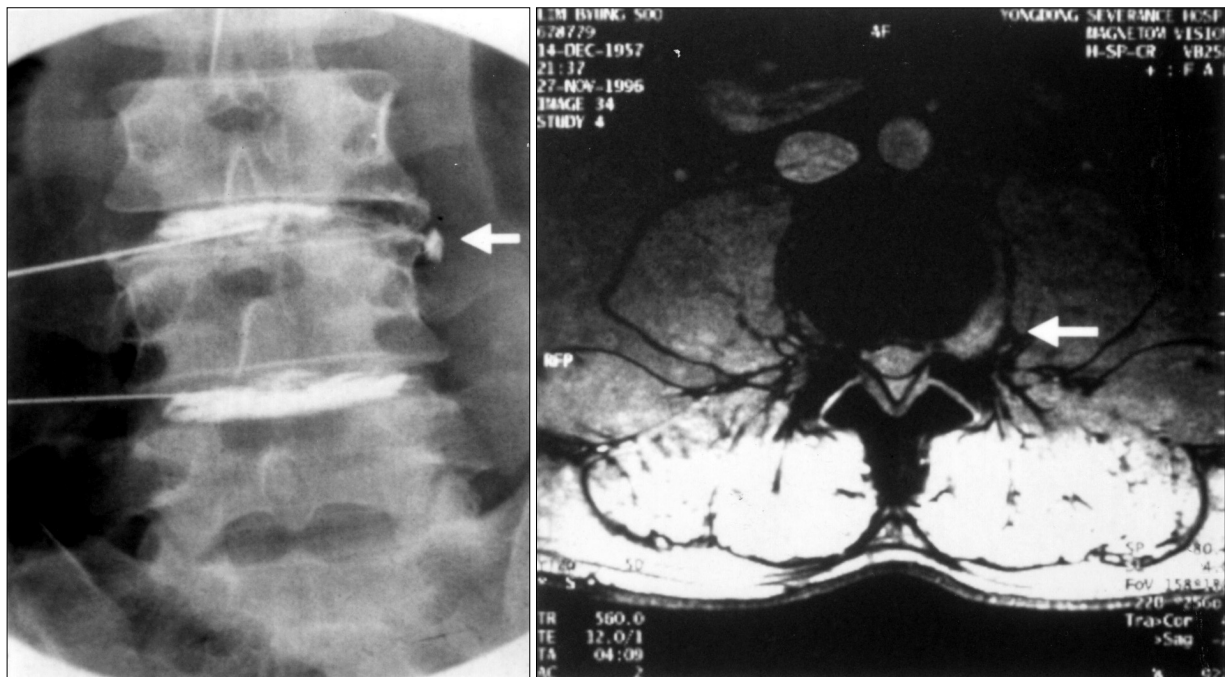


Fig. 3. Discography showing for lateral disc herniation in L3-4 level(right, arrow), and MRI axial scan indicating the same lesion(left, arrow).

(foraminal type or intracanalicular type) 가 (leakage) (intertransverse li -
¹⁵⁾¹⁹⁾³⁸⁾ (inter -
transverse approach) gament)가
(foraminal stenosis) (sequestered)
(for a -
minal portion) 가 . Transpars techni -
que extraforaminal exposure (extruded type)
(facet joint) chymopapain
(pars interarticularis) pner ⁴¹⁾ 1993 Wa -
(extruded type)
(chymopapain)
(extreme lateral or extraforaminal approach) 3042
가 (medial 85.6%
portion) 가 91.3%
(foraminal stenosis) 20
가 ¹³⁾ 50
Chymopapain 1964 Smith
1976 placebo chymopapain double - blind st -
udy가 ³⁶⁾, 1982 FDA
12,000
. Chymopapain anaphylactic sh -
ock transverse myelitis (extruded typed)
meta - analysis ⁸⁾¹⁰⁾ chymopapain
Chymopapain 1992 Muralikuttan ²²⁾ chymopapain
gregate 가 (6 , 3
CT scan MRI) 1
가 . Javid
⁷⁾²³⁾²⁵⁾²⁸⁾ 가 ¹⁶⁾ chymopapain
97.1% 87% 84%
76.9% 79% 85%,
39.1% 6 78.2%
94.1% , 89.8%
83.3% 가
(intradiscal therapy) Bouillet⁶⁾ 1990
(protruded type or contained type)가 가 meta - analysis chymopapain
²⁷⁾⁴⁰⁾⁴¹⁾ 3.7% 26%
(extruded type) 4.2%
(sequestered type)가 chymopapain 0.45 % 10
(protruded or contained type) . 1996 Brown⁸⁾ 30
⁹⁾¹¹⁾¹⁹⁾⁴²⁾ chymopapain 가
가 3 20

ted nucleotomy)
가
chymopapain
steroid
결 론
12
3042
69
chymopapain
가
chymo-
papain
• : 1998 9 15
• : 1998 11 6
• :
135 - 270 146 - 92
: 02) 3497 - 3390, : 02) 3461 - 9229

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